AR-B1660--SOCKET 370 PENTIUM III GRADE CPU CARD WITH VGA/LCD/LAN

Operation Manual

Version 1.3

1. INTRODUCTION

This chapter describes:

- About This Manual

- System Specifications

- Safety precautions

Experienced users can skip to chapter 2 on page 5 for Quick Start.

1-1. ABOUT THIS MANUAL

Thanks for purchasing our AR-B1660--Socket 370 Pentium III Grade CPU Card with VGA / LCD / LAN which is fully PC / AT compatible. This manual contains five chapters. By following the instructions herein, you can easily use AR-B1660 CPU board.

Chapter 1   Introduction
This chapter notifies you how to avoid the damages against this CPU Card as well as describes the background of this manual and the specification of AR-B1660..

Chapter 2   Technical Summary
This section gives you the information about the Technical maps.

Chapter 3   Hardware Configuration
This chapter outlines the components' locations and their functions.   From this part, you can find how to set jumper and configure this card, as you need.

Chapter 4   Software Utilities
Helpful information about the proper installations of the VGA and LAN function are provided in this chapter.

Chapter 5   AMI BIOS Setup
This chapter indicates you how to set up the BIOS configurations.

1-2. SYSTEM SPECIFICATION

CPU:
Supports Intel Socket 370 Pentium III up to 850 MHz or Celeron up to 800 MHz

CHIPSET:
INTEL 440BX

RAM MEMORY:
Supports 1 168-pin DIMM (PC-100 SDRAM) sockets, 256Mb max.

CACHE SIZE:
Internal 128KB L2 cache inside the CPU.

ETHERNET:
Uses RT8139C chipset, supports 10/100M Base T with RJ-45 connector built-in LED.

SUPER I/O:
2 PCI IDE---with one 2.54 mm 40-pin connectors, and one 2.0mm 44pin connector.
1 FDC---with 2.54mm 34 -pin connector.
1 Parallel--- with 2.0 mm 26-pin connector. Supports SPP/EPP/ECP mode.
4 RS-232C-COM ports with 2.54mm 40-pin connector located at bracket.
RS-232C/RS485 is selected by jumper and use the same connector.
IrDA uses 2.54mm 5-pin header.

BIOS:
AMI flash BIOS (256KB, including VGA/LCD/LAN BIOS) Supports utility program for easy to update new version of BIOS.

KEYBOARD/MOUSE:
PS/2 compatible with 2.0mm 6-pin JST connector

BUS INTERFACE:
PC-104, PCI slot

VGA/LCD DISPLAY:
C&T 69000 with 2MB VRAM internally.
CRT-with 2.0mm 10-pin connector.
LCD-with DF9 1.0mm 51-pin connector (IIDA   DF9-51P-1V)

SYSTEM POWER REQUIREMENT:
+5V,4.35A   & +12V,0.15A   (typical).

USB:
Built-in 2 ports USB interface with 2.54mm 10-pin headers.

RTC:
Chipset included. Supports ACPI Function with 10 years data retention.

SPEAKER:
Supports on-board buzzer and external speaker. (with 2.5mm 4-pin header).

FLASH DISK:
Supports 1 DiskOnChip Socket 144MB.

H/W MONITORING:
Built-in (Wilnbond WB83783) hardware monitoring chipset.

HEADERS:
2-pin Reset, hard disk LED, and power.
3-pin CPU cooling fan and Chassis cooling fan.

SWITCHES:
Use SMD DIP switch to select base clock and CPU clock multiplier.

CPU SP:
Separated Vcore and Vio.

CE DESIGN-IN:
Add EMI components to COM ports, Parallel port, CRT, USB, Keyboard, and PS/2 mouse.
Designed in accordance with EMC requirements.

PC BOARD:
6 layers, EMI considered, especially in switching power layout.

BOARD DIMENSION:
Compact size 203mm x 146mm (7.99" x 5.74")

1-3. SAFETY PRECAUTIONS

Follow the messages hereinafter to protect your systems from damage on all occasions.

Touch a grounded metal object to discharge the static electricity in your body (or ideally, wear a grounded wrist strap)

Stay safe from the electric shock. Don't touch any components of this card when the card is on. Always switch off power when the system is not in use.

Disconnect power when changing any hardware devices. For instance, when you connect a jumper or install any cards, a surge of power may damage the electronic components or the whole system.

2 TECHNICAL SUMMARY

TECHNICAL SUMMARY

This chapter focuses on:

- Interrupt Map

- RTC & CMOS RAM Map

- Timer & DMA Channels Map

- I/O & Memory Map

2-1. INTERRUPT MAP

The equivalent of two 8259 Programmable Interrupt Controllers (PIC) are included on the AR-B1570 board.   They accept requests from peripherals, resolve priorities on pending interrupts in service, issue interrupt requests to the CPU, and provide vectors which are used as acceptance indices by the CPU to determine which interrupt service routine to execute.   These two controllers are cascaded with the second controller representing IRQ8 to IRQ15, which is rerouted through IRQ2 on the first controller.

The following is the system information of interrupt levels:

Interrupt Level	Description
NMI	Parity check
CTRL1 **CTRL2**	
IRQ0	System timer interrupt from timer 8254
IRQ1	keyboard output buffer full
IRQ2	Rerouting to IRQ8 to IRQ15

IRQ8:Real time clock
IRQ9:Reserved
IRQ10:LAN adapters(based on PCI INT routing)
IRQ12:Reserved for PS/2 mouse
IRQ13:Math.Co-processor
IRQ14:Hard disk adapter
IRQ15:Hard disk adapter

IRQ3	Serial port(depends on setup assignment)
IRQ4	Serial port(depends on setup assignment)
IRQ5	Reserved
IRQ6	Reserved for floppy disk adapter
IRQ7	Parallel port 1

Interrupt Controller

2-2. RTC & CMOS RAM MAP

CODE	ASSIGNMENT
00	Seconds
01	Second alarm
02	Minutes
03	Minutes alarm
04	Hours
05	Hours alarm
06	Day of week
07	Day of month
08	Month
09	Year
0A	Status register A
0B	Status register B
0C	Status register C
0D	Status register D
0E	Diagnostic status byte
0F	Shutdown byte
10	Floppy Disk drive type byte
11	Reserve
12	Hard Disk type byte
13	Reserve
14	Equipment byte
15	Base memory low byte
16	Base memory high byte
17	Extension memory low byte
18	Extension memory high byte
30	Reserved for extension memory low byte
31	Reserved for extension memory high byte
32	Date Century byte
33	Information Flag
34-3F	Reserve
40-7f	Reserved for Chipset Setting Data

2-3. TIMER & DMA CHANNELS MAP

Timer Channel Map:

Timer Channel	Assignment
0	System timer interrupt
1	DRAM Refresh request
2	Speaker tone generator

DMA Channel Map:

DMA Channel	Assignment
0	Available
1	IBM SDLC
2	Floppy Disk adapter
3	Channel-3 Available
4	Cascade for DMA controller 1
5	Available
6	Available
7	Available

2-4. I/O & MEMORY MAP

Memory Map:

MEMORY MAP	ASSIGNMENT
0000000-009FFFF	System memory used by DOS and application
00A0000-00BFFFF	Display buffer memory for VGA/ EGA / CGA / MONOCHROME adapter
00C0000-00DFFFF	Reserved for I/O device BIOS ROM or RAM buffer.
00E0000-00EFFFF	Reserved for PCI device ROM
00F0000-00FFFFF	System BIOS ROM
0100000-FFFFFFF	System extension memory

I/O Map:

I/O MAP	ASSIGNMENT
000-01F	DMA controller (Master)
020-021	Interrupt controller (Master)
022-023	Chipset controller registers I/O ports.
040-05F	Timer control registers.
060-06F	Keyboard interface controller (8042)
070-07F	RTC ports & CMOS I/O ports
080-09F	DMA register
0A0-0BF	Interrupt controller (Slave)
0C0-0DF	DMA controller (Slave)
0F0-0FF	Math coprocessor
1F0-1F8	Hard Disk controller
278-27F	Parallel port-2
2B0-2DF	Graphics adapter controller
2F8-2FF	Serial port-2
360-36F	Net work ports
378-37F	Parallel port-1
3B0-3BF	Monochrome & Printer adapter
3C0-3CF	EGA adapter
3D0-3DF	CGA adapter
3F0-3F7	Floppy disk controller
3F8-3FF	Serial port-1

3. HARDWARE CONFIGURATION

Four parts are included:

- ■ Jumper & Connector Quick Reference Table

- ■ Components' Locations

- ■ Configuration and Jumper settings

- ■ Connector Pin Assignments

3-1. JUMPER & CONNECTOR QUICK REFERENCE TABLE

SWITCH & JUMPER:

DOC 2000 SEG JP5

System Clock Select.. JP4

LCD Power JP1

SERIAL PORT A~D Voltage Select............................... JP7~JP10

BATTERY JUMPER...JP6

CONNECTOR:

PC/104 BUS CN4, CN5

Reset Switch J1

Floppy Disk Drive Connector CN7

Hard Disk Drive Connector (2.54mm 40pin) CN2

Hard Disk Drive Connector (2.0mm 44pin) CN6

Power LED & Hard Disk Drive LED Connector LM1

LCD Panel Connector CN1

Ethernet RJ-45 Connector CN12

External Audio Connector CN9

Printer Connector CN8

CPU Fan Power Connector J2

VGA Connector DB1

IR Connector J5

Power on connector for ATX Supply CN15

Power Control Connector CN3

External Keyboard & Mouse Connector CN16

Memory Installing DIMM1

Disk-On-Chip Socket U3

Serial Port A~D…………………………………………………….CN11

IDE Hard Disk Active LED…………………………………………J3, J12

KEYLOCK & LED CONN………………………………………...J6

USB Connector………………………………………………...J7

3-2. COMPONENT LOCATIONS

AR-B1660 Connector, Jumper and Component Locations
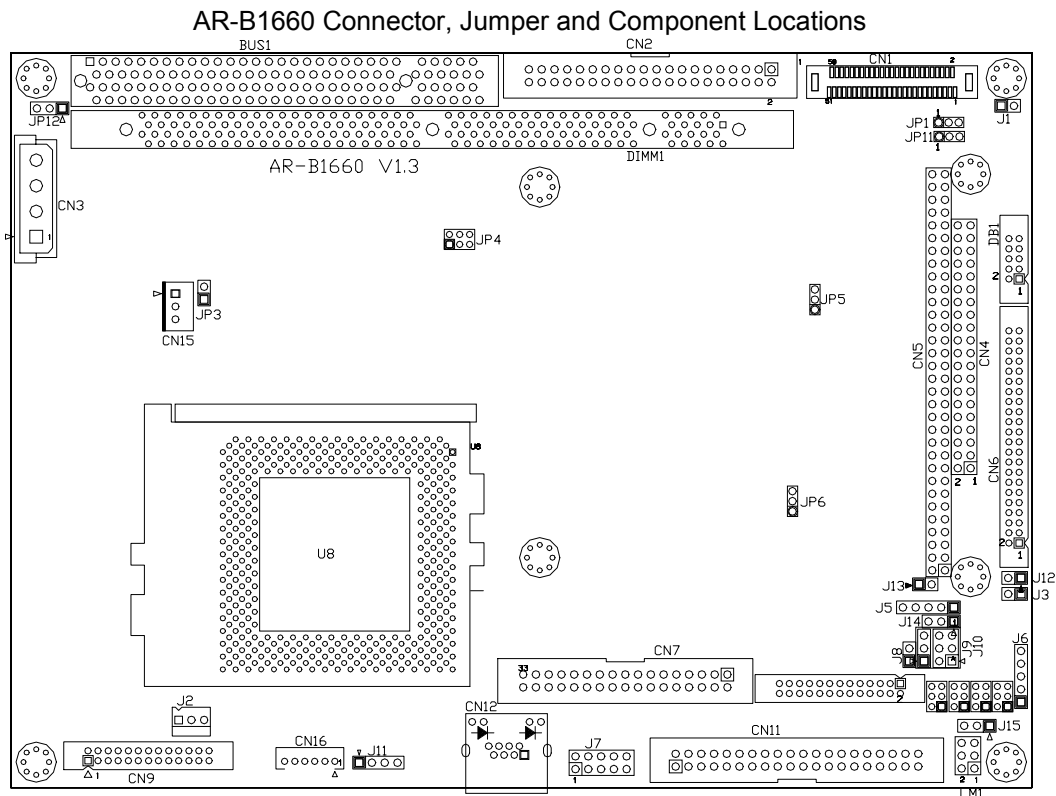
3-3. PACKING LIST

- The quick setup manual
- 1 AR-B1660 CPU board
- 2 Hard disk drive adapter cable
- 1 Floppy disk drive adapter cable
- 1 Parallel port adapter cable mounted on one bracket
- 1 software utility CD
- 4 RS-232 and PS/2 Mouse & Keyboard interface cable mounted on bracket

3-4. HOW TO SET JUMPERS

A jumper consists of two or three metal pins with a plastic base mounted on the card, and a small plastic cap (with a metal contact inside) to connect the pins, so you can set up your hardware configuration by "open" or close the pins. The jumper can be combined into sets, which called jumper blocks. When the jumpers are all in the block, you have to put them together to set up the hardware configuration. The figure below shows how it looks.

JUMPERS AND CAP

If a jumper has three pins, for example, labeled PIN1, PIN2, and PIN3, you can either connect PIN1 & PIN2 to create one setting and shorting or connect PIN2 & PIN3 to create another setting. The jumper setting rules are applied throughout this manual.

3-5. RS232/485 SELECTION

The jumper settings are as follows:
(1) COM 1 & COM4 (RS232)

RS-232
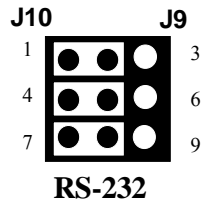
Factory Preset

(2) COM 4(RS485)
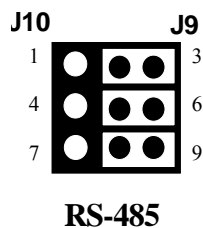
RS-485

(3) RS-485 Terminator Select (J8)
When there is only one line the setting should be left, but if you are using multiple blocks on a single line. This should be set to "ON" in order to properly terminate the connection for better transmission of data.

OFF   ON
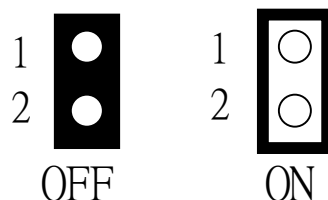
Factory Preset

Figure 0-6 J9: RS-485 Terminator Select

3-6. DOC MEMORY

(1) DOC Memory Mapping Selection (JP5)
A 32-pin DOC socket supports a DOC (Disk-on-Chip) up to 72Mb. This PnP Flash ROM DOC can be installed as one of the user's hard disk drive. And if set as Drive C, it can be used to boot up the computer with MS-DOS installed. It offers much faster access than a floppy or hard disk and greatly increases reliability under harsh environment.
The DOC Memory Mapping is as follows:

1   Place 1-2 :D000h
2   Place 2-3 :D400h
3   Don't Place :D800h

Factory Preset

3-7. SYSTEM CLOCK SELECT AND CPU SETTING

1-3 & 2-4:100MHZ
3-5 & 4-6:66MHZ(DEAFAULT)

Factory Preset
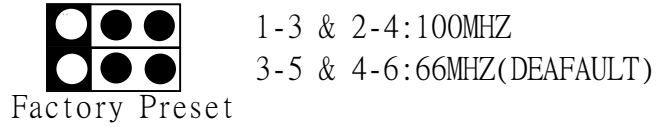
3-8. SERIAL PORT A~D CONNECTOR (CN11)
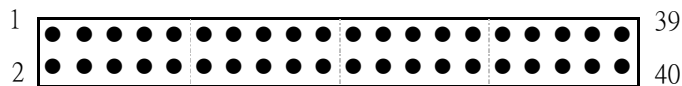
The SERIAL PORT A~D Connector assignments are as follows:

SERIAL PORT A~D CONNECTOR (CN11)			
PIN	Signal	PIN	Signal
1	–DCD1F	2	–DSR1F
3	RXD1F	4	–RTS1F
5	TXD1F	6	–CTS1F
7	–DTR1F	8	–RI1F
9	VCOM1	10	GND
11	–DCD2F	12	–DSR2F
13	RXD2F	14	–RTS2F
15	TXD2F	16	–CTS2F
17	–DTR2F	18	–RI2F
19	VCOM2	20	GND
21	–DCD3F	22	–DSR3F
23	RXD3F	24	–RTS3F
25	TXD3F	26	–CTS3F
27	–DTR3F	28	–RI3F
29	VCOM3	30	GND
31	–DCD4F	32	–DSR4F
33	RXD4F	34	–RTS4F
35	TXD4F	36	–CTS4F
37	–DTR4F	38	–RI4F
39	VCOM4	40	GND

3.9. PC/104 CONNECTOR

(1) 64 Pin PC/104 Connector A & B (CN5)

64-Pin PC/104 Connector
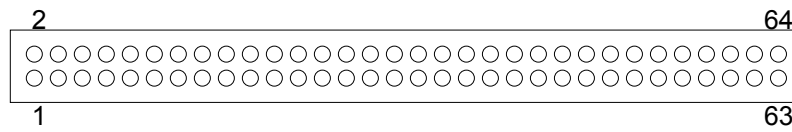
PIN	Signal	PIN	Signal	PIN	Signal	PIN	Signal	64 Pin PC/104 Pin Assignments
1	–IOCHCK	2	GND	33	SA14	34	–DACK1	
3	SD7	4	RSTDRV	35	SA13	36	DREQ1	
5	SD6	6	VCC	37	SA12	38	–REFRESH	
7	SD5	8	IRQ9	39	SA11	40	SYSCLK	
9	SD4	10	Not Used	41	SA10	42	IRQ7	
11	SD3	12	DREQ2	43	SA9	44	IRQ6	
13	SD2	14	Not Used	45	SA8	46	IRQ5	
15	SD1	16	–ZEROWS	47	SA7	48	IRQ4	
17	SD0	18	(+12V)	49	SA6	50	IRQ3	
19	IOCHRDY	20	GND	51	SA5	52	–DACK2	
21	AEN	22	–SMEMW	53	SA4	54	TC	
23	SA19	24	–SMEMR	55	SA3	56	BALE	
25	SA18	26	–IOW	57	SA2	58	VCC	
27	SA17	28	–IOR	59	SA1	60	OSC	
29	SA16	30	–DACK3	61	SA0	62	GND	
31	SA15	32	DREQ3	63	GND	64	GND	

(2) 40 Pin PC/104 Connector C & D (CN4)

```
2                                        40
┌─────────────────────────────────────────┐
│ ○○○○○○○○○○○○○○○○○○○○ │
│ ○○○○○○○○○○○○○○○○○○○○ │
└─────────────────────────────────────────┘
1                                        39
```
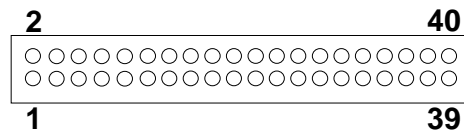
40 Pin PC/104 Pin Assignments

PIN	Signal	PIN	Signal
1	GND	2	GND
3	–SBHE	4	–MEMCS16
5	LA23	6	–IOCS16
7	LA22	8	IRQ10
9	LA21	10	IRQ11
11	LA20	12	IRQ12
13	LA19	14	IRQ15
15	LA18	16	IRQ14
17	LA17	18	–DACK0
19	–MEMR	20	DREQ0
21	–MEMW	22	–DACK5
23	SD8	24	DREQ5
25	SD9	26	–DACK6
27	SD10	28	DREQ6
29	SD11	30	–DACK7
31	SD12	32	DREQ7
33	SD13	34	VCC
35	SD14	36	–RMASTER
37	SD15	38	GND
39	Not Used	40	GND

3-10. PARALLEL PORT CONNECTOR (CN8)

To use the parallel port, an adapter cable has to be connected to the CN8 connector (26 pin header type). The adapter cable is mounted on a bracket and is included in your AR-B1600 package. The connector for the parallel port is a 25 pin D-type female connector.
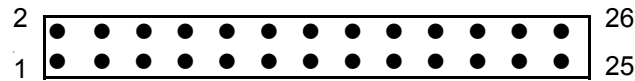
Parallel Port Connector (26 Pin header)
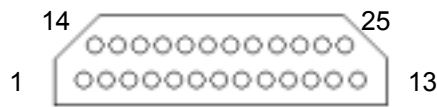
D-Type Connector

Parallel Port Pin Assignment

3-11. FLOPPY DISK DRIVE CONNECTOR (CN7)

FDD: Floppy Disk Drive Connector
You can use a 34-pin daisy-chain cable to connect a two-FDD. One end of this cable is to attach the FDD on the board; the other end is to attach the two-FDD.
The pin assignments are as follows:
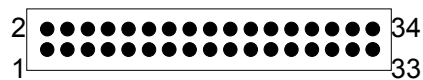
PIN	ASSIGNMENT	PIN	ASSIGNMENT
1	GND	2	DRVDEN0
3	GND	4	NC
5	GND	6	DRVDEN1
7	GND	8	INDEX
9	GND	10	MTR0
11	GND	12	DRV1
13	GND	14	DRV0
15	GND	16	MTR1
17	GND	18	DIR
19	GND	20	STEP
21	GND	22	WDATA
23	GND	24	WGATE
25	GND	26	TRK0
27	GND	28	WRPRT
29	GND	30	RDATA
31	GND	32	SEL
33	GND	34	DSKCHG

3-12. HARD DISK DRIVE (IDE) CONNECTOR (CN2, CN6)

IDE1: Hard Disk Drive Connector (CN2)
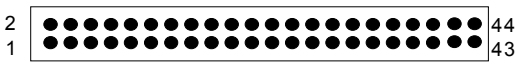
The AR-B1660 possesses two HDD connectors, IDE1 and IDE2. The pin assignments are as follows:

PIN	SIGNAL	PIN	SIGNAL
1	-RESET	2	GROUND
3	DATA 7	4	DATA 8
5	DATA 6	6	DATA 9
7	DATA 5	8	DATA 10
9	DATA 4	10	DATA 11
11	DATA 3	12	DATA 12
13	DATA 2	14	DATA 13
15	DATA 1	16	DATA 14
17	DATA 0	18	DATA 15
19	GROUND	20	NOT USED
21	IDEDRQA	22	GROUND
23	-LOW A	24	GROUND
25	-LOR A	26	GROUND
27	-CHRDY A	28	GROUND
29	DACKA	30	GROUND
31	-IRQ 14	32	NOT USED
33	SA 1	34	NOT USED
35	SA 0	36	SA2
37	CS 0	38	SA1
39	HD LED A	40	NOT USED

IDE2: Hard Disk Drive Connector (CN6)

The pin assignments are as follows:

PIN	SIGNAL	PIN	SIGNAL
1	-RESET	2	GROUND
3	DATA 7	4	DATA 8
5	DATA 6	6	DATA 9
7	DATA 5	8	DATA 10
9	DATA 4	10	DATA 11
11	DATA 3	12	DATA 12
13	DATA 2	14	DATA 13
15	DATA 1	16	DATA 14
17	DATA 0	18	DATA 15
19	GROUND	20	NOT USED
21	IDEDRQA	22	GROUND
23	-LOW A	24	GROUND
25	-LOR A	26	GROUND
27	-CHRDY A	28	GROUND
29	DACKA	30	GROUND
31	-IRQ 14	32	NOT USED
33	SA 1	34	NOT USED
35	SA 0	36	SA2
37	CS 0	38	SA1
39	HD LED A	40	NOT USED
41	VCC	42	VCC
43	GROUND	44	GROUND

3-13. LCD CONNECTOR FOR 36Bit (CN1)

51 [connector diagram] 1
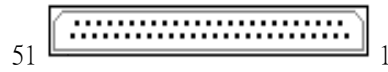
LCD Pin Assignment

PIN	Signal	PIN	Signal
1	FP0	2	FP16
3	FP1	4	FP17
5	FP2	6	FP18
7	FP3	8	FP19
9	FP4	10	FP20
11	FP5	12	FP21
13	FP6	14	FP22
15	FP7	16	FP23
17	LCDVDD	18	LCDVDD
19	FP8	20	FP24
21	FP9	22	FP25
23	FP10	24	FP26
25	FP11	26	FP27
27	FP12	28	FP28
29	FP13	30	FP29
31	FP14	32	FP30
33	FP15	34	FP31
35	FP34	36	FP32
37	FP35	38	FP33
39	M/DE	40	GND
41	VCC	42	FLM
43	VCC	44	GND
45	ENABLK	46	SHFCLK
47	ENAVEE	48	GND
49	(+12V)	50	LP
51	(+12V)	--	

Flat Panel Display Interface (continued)

Pin Name	Mono SS 8-bit	Mono DD 8-bit	Mono DD 16-bit	Color TFT 9/12/16bit	Color TFT 18/24bit	Color TFT 36bit	Color TFT-HR 18/24bit	Color STN-SS 8-bit(4bp)	Color STN-SS 16-bit(4bp)	Color STN-DD 8-bit(4bp)	Color STN-DD 16-bit(4bp)	Color STN-DD 24-bit
P0	D0	UD3	UD7	B0	B0	FB0	FB0	R1	R1	UR1	UR0	UR0
P1	D1	UD2	UD6	B1	B1	FB1	FB1	B1	G1	UG1	UG0	UG0
P2	D2	UD1	UD5	B2	B2	FB2	FB2	G2	B1	UB1	UB0	UB0
P3	D3	UD0	UD4	B3	B3	FB3	FB3	R3	R2	UR2	UR1	LR0
P4	D4	LD3	UD3	B4	B4	FB4	SB0	B3	G2	LR1	LR0	LG0
P5	D5	LD2	UD2	G0	B5	FB5	SB1	G4	B2	LG1	LG0	LB0
P6	D6	LD1	UD1	G1	B6	SB0	SB2	R5	R3	LB1	LB0	UR1
P7	D7	LD0	UD0	G2	B7	SB1	SB3	B5	G3	LR2	LR1	UG1
P8			LD7	G3	G0	SB2	FG0		B3		UG1	UB1
P9			LD6	G4	G1	SB3	FG1		R4		UB1	LR1
P10			LD5	G5	G2	SB4	FG2		G4		UR2	LG1
P11			LD4	R0	G3	SB5	FG3		B4		UG2	LB1
P12			LD3	R1	G4	FG0	SG0		R5		LG1	UR2
P13			LD2	R2	G5	FG1	SG1		G5		LB1	UG2
P14			LD1	R3	G6	FG2	SG2		B5		LR2	UB2
P15			LD0	R4	G7	FG3	SG3		R6		LG2	LR2
P16					R0	FG4	FR0					LG2
P17					R1	FG5	FR1					LB2
P18					R2	SG0	FR2					UR3
P19					R3	SG1	FR3					UG3
P20					R4	SG2	SR0					UB3
P21					R5	SG3	SR1					LR3
P22					R6	SG4	SR2					LG3
P23					R7	SG5	SR3					LB3
P24						FR0						
P25						FR1						
P26						FR2						
P27						FR3						
P28						FR4						
P29						FR5						
P30						SR0						
P31						SR1						
P32						SR2						
P33						SR3						
P34						SR4						
P35						SR5						

3-14. EXTERNAL KEYBOARD & MOUSE CONNECTOR (CN16)

EXPS2: External PS2 Connector
The pin assignments are as follows:

CN16
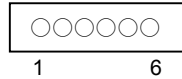
1. MOUSE DATA
2. KB DATA
3. GND
4. VCC
5. MOUSE CLOCK
6. KB CLOCK

PIN	ASSIGNMENT
1	Mouse Data
2	KB Data
3	GND
4	VCC
5	Mouse Clock
6	KB Clock

3-15. RESET SWITCH (J1)

2 – RS

1 - GND

3-16. LED (LM1)

LM1

1 2   1-2:HDD LED(CN2)

3 4   3-4:HDD LED1(CN6)

5 6   5-6:PWR LED
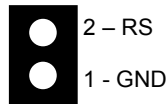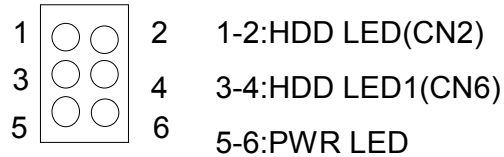
3.17. INFRARED CONNECTOR (J5)

J5

1 VCC

2 NC

3 IR DATA RECIEVE

4 GND

5 IR DATA TRANSFER
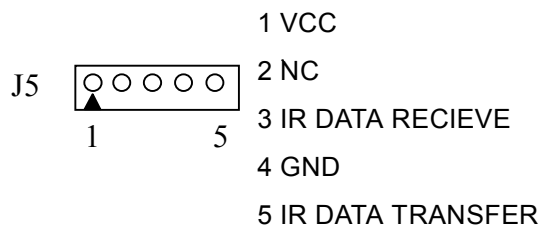
3-18. EXTERNAL SPEAKER HEADER (J11)

1 Vcc
2 X
3 INT BZ
4 BUZ Z
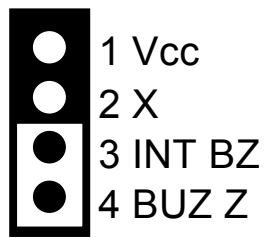
3-4 On
Enable Internal Buzzer

Factory Preset

1 Vcc
2 X
3 INT BZ
4 BUZ Z
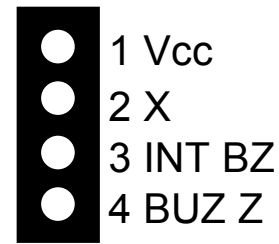
Enable External Buzzer

3-19. ETHERNET RJ-45 CONNECTOR (CN12)

The pin assignments are as follows:
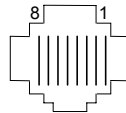
PIN	FUNCTION	PIN	ASSIGNMENT
1	TPTX+	5	NOT USED
2	TPTX+	6	TPRX-
3	TPRX+	7	NOT USED
4	NOT USED	8	NOT USED

3-20. VGA CRT CONNECTOR (DB1)

1.RED   6.AGND
2.AGND 7.V.S
3.GREEN 8.DDCD
4.GND   9.H.S
5.BLUE 10.DDCK
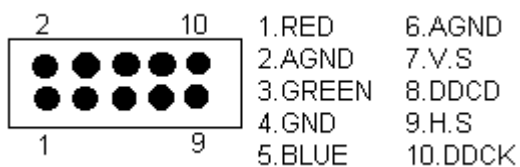
DB1 Connector Pin Assignment

PIN	Signal	PIN	Signal
1	RED	2	AGND
3	GREEN	4	GND
5	BLUE	6	AGND
7	V.S	8	DDCD
9	H.S	10	DDCK

3-21. POWER CONTROL CONNECTOR (CN15)

```
1  ●          1  ○  PSON
2  ●          2  ○
3  ●          3  ○  +5VSB

for AT Power    for ATX Power
```
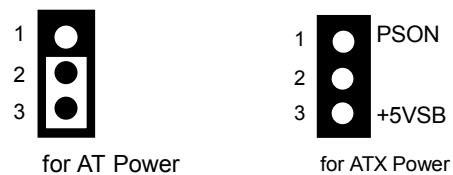
Factory Preset

3-22. UNIVERSAL SERIAL BUS CONNECTOR (J7)

```
2          10
○ ○ ○ ○ ○
○ ○ ○ ○ ○
1           9
```

1.Vcc0   5.DATA0+
2.Vcc1   6.DATA1+
3.DATA0-   7.8. GND
4.DATA1-   9.10. GND
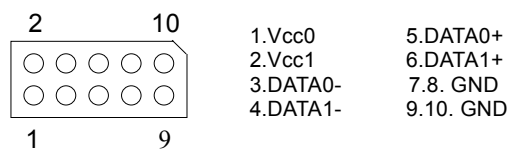
3-23. CPU FAN POWER CONNECTOR (J2)

```
○ ○ ○
3 2 1
```

1. GND
2. +12V
3. Fan Speed

3-24. BATTERY JUMPER (JP6)

```
1  ●   1-2:EXTRNAL BATTERY
2  ●
3  ●   2-3:ON-BOARD BATTERY
```
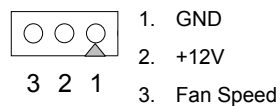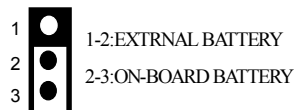
Factory Preset

3-25. DOC SOCKET (U3)

DOC: 32pin Disk-on-chip Socket
The pin assignments are as follows:

PIN	ASSIGNMENT	PIN	ASSIGNMENT
1	NC	17	SD3
2	NC	18	SD4
3	NC	19	SD5
4	SA12	20	SD6
5	SA7	21	SD7
6	SA6	22	CE
7	SA5	23	SA10
8	SA4	24	OE
9	SA3	25	SA11
10	SA2	26	SA9
11	SA1	27	SA8
12	SA0	28	NC
13	SD0	29	NC
14	SD1	30	VCC
15	SD2	31	WR
16	GND	32	VCC

3.26. SERIAL PORT A~D SELECT (JP7~JP10)

1-2	+5V
3-4	+12V
5-6	GND
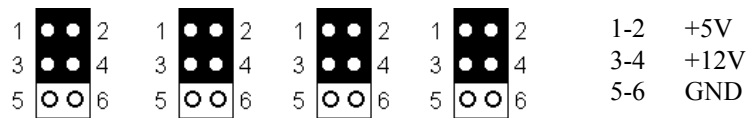
Factory Preset

3.27. POWER ON CONNECTOR FOR ATX POWER SUPPLY (JP3)

2   1

GND ◻◻ PSON
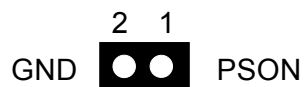
3.28. 26-PIN AUDIO CONNECTOR (CN9)

1   25

2   26
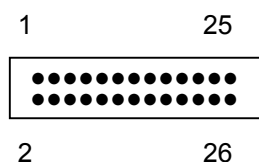
PIN	SIGNAL	PIN	SIGNAL
1	AUXAL	2	LINEL
3	AUXAR	4	LINEL
5	VCC	6	NOT USED
7	AUDIOL	8	MICPH
9	AUDIOR	10	PCSPKO
11	GND	12	GND
13	NOT USED	14	NOT USED
15	GND	16	GND
17	NOT USED	18	NOT USED
19	NOT USED	20	NOT USED
21	NOT USED	22	NOT USED
23	NOT USED	24	NOT USED
25	GND	26	GND

Note: the connector does not contain the GAME (MIDI) port signal. When AR-B9425 audio card is used with this CPU board, the GAME port function is not supported.

3.29. POWER CONNECTOR (CN3)

CN3

| 1 | 4 |

1. +12V
2. GND
3. GND
4. +5V

J13

| 1 | 2 |

1. -12V
2. GND

3.30. HDD LED HEADER (J3, J12)

J3　　2 – VCC
　　　 1 – HD LED

CN2 HDD LED

J12　　2 – VCC
　　　 1 – HD LED

CN6 HDD LED

3.31. LCD POWER (JP1)

1
2
3

1-2:USE +5V

2-3:USE +3.3V
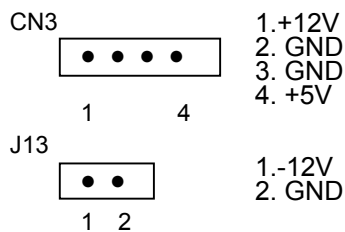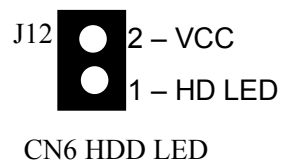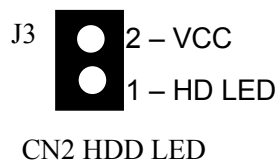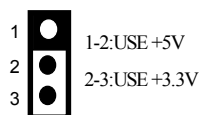
Factory Preset

3.32. CPU SETTING SYSTEM BUS CLOCK (JP4)

100MHz   66MHz
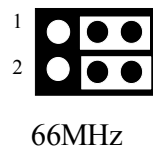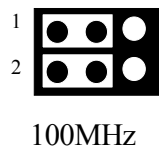
Factory Preset

3.33. RS-485 HEADER (J14)

1 2 3

1 N485+
2 N485-
3 GND

3.34. PCI SELECT (JP12)

1-2 when riser card is applied, please set 1-2 close

2-3 Factory Preset

Factory Preset
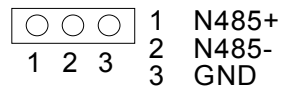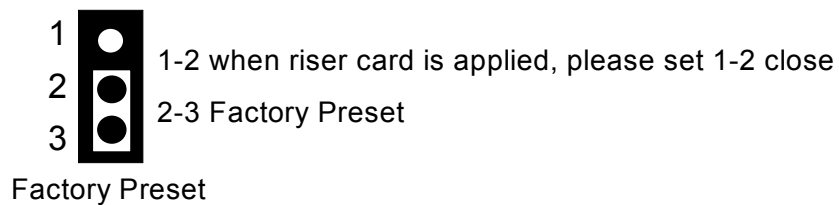
3.35. TOUCH SCREEN CONNECTOR (J15)

1 2 3

1 GND
2 TXDF
3 RXDF
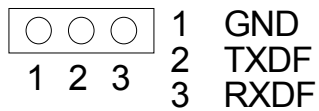
4. SOFTWARE UTILITIES

Sections includes:

- Utility CD File List

- Setup

4-1. UTILITY CD FILE

1660_DRV#1	1660_DRV 2	1660_DRV#3	1660_DRV#4	1660_DRV#5	1660_DRV#6
FREEBSD	WFW311	DMI	INTEL/95	SCSIDRV	MANUAL.PDF
LINUX	NT351	WINDIAG/WIN4	INTEL/NT	W95VGA	
NDIS2DOS	MSLANMAN.DOS	BROM		WINNTVGA	
NDIS2OS2	MSLANMAN.OS2	MACOS		WD	
NWCLIENT	NWSERVER/311	RTOS			
NWSERVER/4X	NWSERVER/312	W98600.EXE			
NWSERVER/500	NWSERVER/40				
RTSPKT	CLIENT32				
SCO	UW7				
TXT	WIN95A				
WIN2000	WINDIAG/WIN2000				
W95OSR2	WINDIAG/WIN9X				
WIN98					
WINNT4					
FILEPATH.LST					
MAINNENU.TXT					
RSET8139.EXE					
VERSION.TXT					
HELP8139.EXE					
NETRTS.INF					
OEMSETUP.INF					
README.TXT					
RELEASE.DOC					

Remark:
1.W98600.EXE is a WIN98 DRIVER for VGA.
2.DRV#1~DRV#2 is ETHERNET DRIVER disk.
3.DRV#4 DISK is INTEL CHIPSET 440BX PIIX4 SETUP DRIVER
4.DRV#5 DISK is SCSI DRIVER FOR WIN95, NT AND WIN98, NT DRIVERS

4-2. SETUP

WIN95 VGA SETUP

To update display driver by choosing display interface card, put disk#5 in driver A, the driver of 65548 will be found, and reboot your system after setup will be ok.

PIIX4 DRIVER SETUP

WIN95: The first step is to execute the INTEL\95\SETUP.EXE in DISK#4, the system will update the driver automatically, the next step is to reboot the system, and then the driver of PIIX4 CHIPSET will be installed to the system correctly.

WINNT: The first step is to execute the INTEL\NT\SETUP.EXE in DISK#4, the system will update the driver automatically, the next step is to reboot the system, and then the driver of PIIX4 CHIPSET will be installed to the system correctly.

5. AMI BIOS SETUP

The following topics are covered:

- BIOS Setup Overview

- Standard CMOS Setup

- Advanced CMOS Setup

- Advanced Chipset Setup

- Power Management

- PCI/Plug and Play

- Peripheral Setup

- Hardware Monitor Setup

- Auto-Detect Hard Disks

- Password Setting

- Load Default Setting

- BIOS Exit

- BIOS Update

5-1. BIOS SETUP OVERVIEW

The BIOS is a program used to initialize and set up the I/O system of the computer, which includes the PCI bus and connected devices such as the video display, diskette drive, and the keyboard.

The BIOS provides a menu-based interface to the console subsystem. The console subsystem contains special software, called firmware that interacts directly with the hardware components and facilitates interaction between the system hardware and the operating system.

The BIOS Default Values ensure that the system will function at its normal capability. In the worst situation the user may have corrupted the original settings set by the manufacturer.

After the computer is turned on, the BIOS will perform diagnostics on the system and display the size of the memory that is being tested. Press the [Del] key to enter the BIOS Setup program, and then the main menu will show on the screen.

The BIOS Setup main menu includes some options.   Use the [Up/Down] arrow key to highlight the option that you wish to modify, and then press the [Enter] key to select the option and configure the functions.

```
+--------------------------------------------------------------+
|        AMIBIOS HIFLEX SETUP UTILITY - VERSION 1.30           |
|   (C) 2000 American Megatrends, Inc.   All Rights Reserved   |
+--------------------------------------------------------------+
|                                                              |
|                    Standard CMOS Setup                       |
|                    Advanced CMOS Setup                       |
|                   Advanced Chipset Setup                     |
|                   Power Management Setup                     |
|                   PCI/Plug and Play Setup                    |
|                       Peripheral Setup                       |
|                    Hardware Monitor Setup                    |
|                    Auto-Detect Hard Disks                    |
|                    Change User Password                      |
|                  Change Supervisor Password                  |
|                Auto Configuration with Defaults              |
|                    Save Settings and Exit                    |
|                     Exit Without Saving                      |
|                                                              |
+--------------------------------------------------------------+
|           Exit without saving the current settings           |
|    ESC: Exit    ↑↓: Sel   F2/F3: Color   F10: Save & Exit    |
+--------------------------------------------------------------+
```

BIOS: Setup Main Menu

CAUTION:
1. The factory-default setting of AR-B1660 is the <Auto Configuration with Optimal Settings>. Acrosser recommends you using the BIOS default settings unless you are very familiar with the settings function. Or you can contact the technical support engineers (FAE).

2. If the BIOS loses the settings, the CMOS will detect the <Auto Configuration with Fail Safe Settings> to boot the operating system.   This option will reduce the performance of the system.   Acrosser recommends you choosing the <Auto Configuration with Optimal Settings> in the main menu. This option gives best-case values that should optimize system performance.

3. The BIOS settings are described in detail in this section.

5-2. STANDARD CMOS SETUP

The <Standard CMOS Setup> option allows you to record some basic system hardware configurations and set the system clock and error handling.   If the CPU board is already installed in a working system, you will not need to select this option anymore.

```
╔══════════════════════════════════════════════════════════════════════════╗
║              AMIBIOS SETUP – STANDARD CMOS SETUP                           ║
║        (C) 2000 American Megatrends, Inc.   All Rights Reserved            ║
╠══════════════════════════════════════════════════════════════════════════╣
║ Date (mm:dd:yyyy): Tue, Jul 03, 2001          Base Memory:   640 KB        ║
║ Time (hh:mm:ss):   15:07:14                   Extd Memory:   127 MB        ║
║                                                                            ║
║ Floppy Drive A:    1.44MB   3 1/2                                          ║
║ Floppy Drive B:        Not Installed                                       ║
║                                               LBA    BLK    PIO    32 Bit  ║
║         Type        Size     Cyln  Head  Wpcom  Sec Mode  Mode  Mode  Mode ║
║ Pri Mater: Not Installed                                                   ║
║ Pri Slave: Not Installed                                                   ║
║ Sec Master: Not Installed                                                  ║
║ Sec Slave: Not Installed                                                   ║
║                                                                            ║
║ Boot Sector Virus Protection        Disabled                              ║
╠══════════════════════════════════════════════════════════════════════════╣
║  Month:    Jan – Dec                          ESC: Exit     ↑↓: Sel        ║
║    Day:    01 – 31                             PgUp/ PgDn: Modify          ║
║     Year: 1901 – 2099                          F1: Help   F2/F3: Color     ║
║                                                                            ║
╚══════════════════════════════════════════════════════════════════════════╝
```

BIOS: Standard CMOS Setup

Date & Time Setup
Highlight the <Date> field and then press the [Page Up] /[Page Down] or [+]/[-] keys to set the current date. Follow the month, day and year format.
Highlight the <Time> field and then press the [Page Up] /[Page Down] or [+]/[-] keys to set the current date. Follow the hour, minute and second format.
The user can bypass the date and time prompts by creating an AUTOEXEC.BAT file.   For information about how to create this file, please refer to the MS-DOS manual.

Floppy Setup
The <Standard CMOS Setup> option records the types of floppy disk drives installed in the system.   The available options for drives A and B are:
To enter the configuration value for a particular drive, highlight its corresponding field and then select the drive type using the left-or right-arrow key.

Hard Disk Setup
The BIOS supports various types for user settings, The BIOS supports <Pri Master> and <Pri Slave> so the user can install up to two hard disks. For the master and slave jumpers, please refer to the hard disk's installation descriptions and the hard disk jumper settings.
You can select <AUTO> under the <TYPE> and <MODE> fields. This will enable auto detection of your IDE drives during bootup. This will allow you to change your hard drives (with the power off) and then power on without having to reconfigure your hard drive type. If you use older hard disk drives, which do not support this feature, then you must configure the hard disk drive in the standard method as described above by the <USER> option.

Please set as "Auto" if slave IDE device, which carries FAT16 partition, is used to boot up system.

Boot Sector Virus Protection

This option protects the boot sector and partition table of your hard disk against accidental modifications. Any attempt to write to them will cause the system to halt and display a warning message. If this occurs, you can either allow the operation to continue or use a bootable virus-free floppy disk to reboot and investigate your system. The default setting is <***Disabled***>. This setting is recommended because it conflicts with new operating systems. Installation of new operating systems requires that you disable this to prevent write errors.

5-3. ADVANCED CMOS SETUP

The <Advanced CMOS Setup> option consists of configuration entries that allow you to improve your system performance, or let you set up some system features according to your preference. Some entries here are required by the CPU board's design to remain in their default settings.

```
+----------------------------------------------------------------------+
|        AMIBIOS SETUP – ADVANCED CMOS SETUP                            |
|     (C) 2000 American Megatrends, Inc.  All Rights Reserved           |
+----------------------------------------------------------------------+
| Quick Boot              Enabled      | Available Options:            |
|  1st Boot Device         IDE-1       |     Disabled                  |
|  2nd Boot Device         CDROM       |  → Enabled                    |
|  3rd Boot Device         Disabled    |                               |
|  4th Boot Device         Disabled    |                               |
|  Try Other Boot Devices  Yes         |                               |
|   Floppy Access Control   Read-Write |                               |
|  Hard Disk Access Control Read-Write |                               |
|  S.M.A.R.T. for Hard Disks Disabled  |                               |
|  BootUp Num- Lock        On          |                               |
|  Floopy Drive Swap       Disabled    |                               |
|  Floopy Drive Seek       Disabled    |                               |
|  PS/2 Mouse Support      Enabled     |                               |
|  Typematic Rate          Fast        |                               |
|  System Keyboard         Absent      |                               |
|  Primary Display         VGA/ EGA    |                               |
|  PASSWORD Check          Setup       |                               |
|  Boot TO OS/ 2 > 64 MB   No          | ESC: Exit     ↑↓: Sel         |
|  Wait For 'F1' If Error  Disabled    | PgUp/ PgDn: Modify            |
|   Hit 'DEL' Message Display Enabled  | F1: Help   F2/F3: Color       |
|                                      |                               |
+----------------------------------------------------------------------+
```

Advanced CMOS Setup

Quick Boot

This category speeds up the <Power On Self Test> (POST) after you power on the computer. If it is set to *Enabled*, the BIOS will shorten or skip some check items during POST.

1st Boot Device
2nd Boot Device
3rd Boot Device
4th Boot Device
These options determine where the system looks first for an operating system.

Try Other Boot Devices
If you have other bootup device other than the above mentioned devices, such as IDE-0, IDE-1, IDE-3, IDE-4, Floppy.

Floppy Access Control

This option determines the floppy access method, which can be either read only or normal (read/write). When it is set, the data in the floppy is being read instead of being written." Normal" allows the floppy to be read or written.

HDD Access Control

This option determines the hard disk access method, which can be either read only or normal (read/write). When it is set to read only, the data in the hard disk is being read instead of being written." Normal" allows the floppy to be read or written.

Available options: Disabled, Enabled

S.M.A.R.T for hard Disks

S.M.A.R.T is abbreviation of Self-Monitoring Analysis and Reporting Technology. It is reliable and precautious technology. When Hard Disk is in disorder, it prevents Hard Disk from the loss of data.

BootUp Num-Lock

This item is used to activate the Num-Lock function upon system boot. If the setting is on, after a boot, the Num-Lock light is lit, and the user can automatically use the number keys.

Floppy Drive Swap

The option reverses the drive letter assignments of your floppy disk drives in the Swap A, B setting, otherwise you leave the setting to *Disabled* (No Swap). This works separately from the BIOS Features and floppy disk swap feature. It is functionally the same as physically interchanging the connectors of the floppy disk drives. When <*Enabled*>, the BIOS swaps the floppy drive assignments so that Drive A becomes Drive B, and Drive B becomes Drive A under DOS.

Floppy Drive Seek

If the <Floppy Drive Seek> item is set to *Enabled*, the BIOS will seek the floppy <A> drive one time upon bootup.

PS/2 Mouse Support

The setting of *Enabled* allows the system to detect a PS/2 mouse on bootup. If it is detected, IRQ12 will be used for the PS/2 mouse. IRQ 12 will be reserved for expansion cards if a PS/2 mouse is not detected. *Disabled* will reserve IRQ12 for expansion cards and therefore the PS/2 mouse will not function.

Typematic Rate

This item specifies the speed at which a keyboard keystroke is repeated.

System Keyboard

The setting of <*Absent*> allows the system to boot without a keyboard attached to the computer, while the setting of <Present> is in the contrary.

Primary Display

The setting of <*Absent*> allows the system to boot without a Primary Display attached to the computer, while the setting of <Present> is in the contrary.

Password Check

This option enables password checking every time the computer is powered on or every time the BIOS Setup is executed. If *Always* is chosen, a user password prompt appears every time the computer is turned on. If *Setup* is chosen, the password prompt appears if the BIOS are executed.

Boot to OS/2 >64MB

When using the OS/2 operating system with DRAM of greater than 64MB installed, you need to *Enabled* this option; otherwise leave this on the setup default of *Disabled*.

Wait for 'F1' If Error

AMIBIOS POST error messages are followed by:

```
                        Press <F1> to continue
```

If this option is set to *Disabled*, the AMIBIOS does not wait for you to press the <F1> key after an error message.

Hit 'DEL' Message Display
Set this option to *Disabled* to prevent the following message:

Hit 'DEL' if you want to run setup

It will prevent the message from appearing on the first BIOS screen when the computer boots.

Internal Cache
This option specifies the caching algorithm used for the L1 internal cache memory.   The settings are:

Setting	Description
Disabled	Neither L1 internal cache memory on the CPU or L2 secondary cache memory is enabled.
WriteBack	Use the write-back caching algorithm.
WriteThru	Use the write-through caching algorithm.

Internal Cache Setting

External Cache
This option specifies the caching algorithm used for the L2 secondary cache memory.   The settings are:

Setting	Description
Disabled	Neither L1 internal cache memory on the CPU or L2 secondary cache memory is enabled.
WriteBack	Use the write-back caching algorithm.
WriteThru	Use the write-through caching algorithm.

External Cache Setting

Shadow
These options control the location of the contents of the 16KB of ROM beginning at the specified memory location. If no adapter ROM is using the named ROM area, this area is made available to the local bus. The settings are:

SETTING	DESCRIPTION
Disabled	The video ROM is not mapped to RAM. The contents of the video ROM cannot be read from or written to cache memory.
Enabled	The contents of C000h - C7FFFh are written to the same address in system memory (RAM) for faster execution.
Cached	This option specifies the size of the memory area reserved for legacy ISA adapter cards.

Shadow Setting

5-4. ADVANCED CHIPSET SETUP

```
┌─────────────────────────────────────────────────────────────────┐
│              AMIBIOS SETUP – ADVANCED CHIPSET SETUP              │
│      (C) 2000 American Megatrends, Inc.   All Rights Reserved   │
├──────────────────────────────────────────┬──────────────────────┤
│ Configure SDRAM Timing by SPD    Enabled │ Available Options:    │
│   SDRAM RAS#  to  CAS# delay     2 SCLKS │    Disabled           │
│   SDRAM RAS#   Percharge         2 SCLKS │  → Enabled            │
│   SDRAM CAS#   Latency           2 SCLKS │                       │
│   SDRAM Leadoff Cmd Timing       Auto    │                       │
│ DRAM Integrity Mode              Non-ECC │                       │
│ DRAM Refresh Rate                15.6 us │                       │
│ Memory Hole                      Disabled│                       │
│ Graphics Aperture Size           64 MB   │                       │
│ 8 bit  I / O Recovery Time       1 Sysclk│                       │
│ 16 bit  I / O Recovery Time      1 Sysclk│                       │
│ Assign IRQ for USB               Enabled │                       │
│ ATX Power Supply Controller      Disabled│                       │
│ LCD CRT Selection                Both    │                       │
│ LCD Type                  #6 640x480 18bit│                      │
│                                          │ ESC: Exit   ↑↓: Sel   │
│                                          │ PgUp/ PgDn: Modify    │
│                                          │  F1: Help   F2/F3: Color│
│                                          │                       │
└──────────────────────────────────────────┴──────────────────────┘
```

BIOS: Advanced Chipset Setup

This option controls the configuration of the board's chipset.   Control keys for this screen are the same as for the previous screen.

```
┌─────────────────────────────────────────────────────────────────┐
│              AMIBIOS SETUP - ADVANCED CHIPSET SETUP             │
│        (C) 1999 American Megatrends, Inc.  All Rights Reserved  │
├─────────────────────────────────────────┬───────────────────────┤
│                                         │ Available Options :    │
│                                         │    Disabled            │
│  Configure SDRAM Timeing by SPD  Enabled│    Enabled             │
│  SDRAM RAS# to CAS# delay        2 SCLKs│                        │
│        RAS# Precharge            2 SCLKs│                        │
│        CAS# Latency              3 SCLKs│                        │
│        Loadoff Cmd Timing        Auto   │                        │
│ DRAM Integrity Mode              Non-ECC│                        │
│ Memory Hole                      Disabled│                       │
│ Graphics Aperture Size           64MB   │                        │
│ 8bit I/O Recovery Time           1 Sysclk│                       │
│ 16bit I/O Recovery Time          1 Sysclk│                       │
│ USB Function                     Enabled│                        │
│ USB Keyboard / Mouse Legacy Support Enabled│                     │
│ ATX Power Supply Controller      Disabled│ ESC:Exit  ↑ ↓ :Sel    │
│ LCD CRT Selection                Both   │ PgUp/PgDn:Modify       │
│ LCD Type                #5 640x480 TFT│ F2/F3:Color             │
└─────────────────────────────────────────┴───────────────────────┘
```

BIOS: Advanced Chipset Setup

Configure SDRAM Timing by SPD:
SPD is the abbreviation Serial Presence Detect. SPD takes accord the chip types, capacity, timing, voltage data. The system can auto adjust memory according to the data to reach the best situation.

SDRAM RAS# to CAS# delay:
When CPU saveS data from memory, it has to deliver RAS single first, and then CAS single. The item is to set up the interval between two singles.

RAS# Precharge:
This item is the time when RAS has to re-locate.

CAS# Latency:
This item is to set up a certain period of time for the memory to start writing and reading data when memory receives one CAS single.

Loadoff Cmd Timing:
It is the first read-write action under burst pattern

Memory Hole:
This reserves the 15MB to 16MB memory address space for use of ISA expansion cards.

Graphics Aperture Size:
The item is to set up AGP display to use a certain amount of memory to save Texture Data.

8 bit I/O Recovery Time:
The item is to set up CPU to demand ISA Bus 8 bit for the time it recovers.

16 bit I/O Recovery Time:
The item is to set up CPU to demand ISA Bus 16 bit for the time it recovers.

Memory Hole at 15-16 MB
This option specifies the range 15MB to 16MB in memory that cannot be addressed on the ISA bus.

USB Function
This option can enable or disable USB function

USB Keyboard/Mouse Legacy Support
These options are used to <*Enabled*> the USB function and it's only useful in the DOS mode.

ATX Power Supply Controller
If the ATX Power Supply Controller function is <*Enabled*>, the system will get more functions such as shutting down the power by using software.

LCD CRT Selection
This item determines to either use LCD Monitor or CRT Monitor in the system.

LCD Type
This option specifies the resolution of LCD.

5-5. POWER MANAGEMENT

This section is used to configure the power management features. This <Power management Setup> option allows you to reduce power consumption. This feature turns off the video display and shuts down the hard disk after a period of inactivity.

AMIBIOS SETUP - Power Management Setup (C) 2000 American Megatrends.Inc. All Rights Reserved			
Power Management/APM	Disabled	Available	Options
Green PC Monitor Power State	Enabled	Disabled	
Video Power Down Mode	Enabled	Enabled	
Hard Disk Power Down Mode	Disabled		
Hard Disk Time Out (Minute)	Disabled		
Standby Time Out (Minute)	Monitor		
Suspend Time Out (Minute)	Monitor		
Display Activity	Monitor		
Device 6 (Serial port 1)	Ignore		
Device 7 (Serial port 2)	Monitor		
Device 8 (Parallel port)	Monitor		
Device 5 (Floppy disk)	Monitor		
Device 0 (Primary master IDE)	Monitor		
Device 1 (Primary slave IDE)	ON		
Device 2 (Secondary master IDE)	Last State	ESC:Exit ↑ ↓ :Sel	
Device 3 (Secondary slave IDE)	Disabled	PgUp/PgDn:Modify	

BIOS: Power Management Setup

Power Management /APM
Enabled this option is to enable the power management and APM (Advanced Power Management) features.

Video Power Down Mode
This option specifies the power management that states the video subsystem enters after a specific period of display inactivity has expired.

Hard Disk Power Down Mode
This option specifies the power management that states the hard disk drive enters after the specified period of display inactivity has expired.

Hard Disk time out (minute)
This item is used to set up the initial value of the waiting timer. The Hard Disk will turn into the suspend mode when the time is out if no operation applied to Hard Disk.

Power Down Time Out (minute)
This item is used to set up the initial value of the waiting timer. The System will turn into the Power Down mode when the time is out if no operation applied to system.

Device
These options enable event monitoring. When the computer is in a power saving mode, the activity on the named interrupt request line is monitored by BIOS. When any activity occurs, the computer enters Full On mode.

Restore on AC/Power Loss
This item is to set up the system to restore the last setting after the AC\Power Loss.

Ring Resume From Soft Off
This item is to set up the function of waking up the system from suspend mode and a ring bell while any access coming from Modem.

Lan Resume From Soft Off
This item is to set up the function of waking up the system from suspend mode.   When encountering an access, the function will be available if system is fixed with an Ethernet card.

5-6. PCI/PLUG AND PLAY

This section is used to configure PCI / Plug and Play features. The <PCI & PNP Setup> option configures the PCI bus slots.   All PCI bus slots on the system use INTA#, thus all installed PCI cards must be set to this value.

AMIBIOS SETUP - PCI/PLUG AND PLAY SETUP		
(C) 2000 American Megatrends, Inc. All Rights Reserved		
Plug and Play Aware O/S	NO	Available Options
Reset Configuration Data	NO	NO
PCI Latency Timer (PCI Clocks)	64	YES
Primary GraphicS Adapter	PCI	
PCI VGA Palette Snoop	Disabled	
DMA Channel 0	PnP	
DMA Channel 1	PnP	
DMA Channel 3	PnP	
DMA Channel 5	PnP	
DMA Channel 6	PnP	
DMA Channel 7	PnP	
IRQ 3	ISA/EISA	
IRQ 4	ISA/EISA	
IRQ 5	PCI/PnP	
IRQ 7	ISA/EISA	
IRQ 9	PCI/PnP	
IRQ 10	ISA/EISA	
IRQ 11	ISA/EISA	
IRQ 12	PCI/PnP	
IRQ 14	ISA/EISA	
IRQ 14	PCI/PnP	ESC:Exit ↑↓:Sel
IRQ 15	PCI/PnP	PgUp/PgDn:Modify
Reserved Memory Size	32K	F2/F3:Color
Reserved Memory Address	CC000	

BIOS: PCI / Plug and Play Setup

Plug and Play Aware O/S
Set this option to <*No*> if the operating system installed in the computer is Plug and Play-aware. The BIOS only detects and enables PnP ISA adapter cards that are required for system boot. The Windows 95 (and above) operating system detects and enables all other PnP-aware adapter cards. Windows 95 (and above) is PnP-aware. Set this option to <*yes*> if the operating system (such as DOS, OS/2, Windows 3.x) does not use PnP. You must set this option correctly or PnP-aware adapter cards installed in your computer will not be configured properly.

Reset Configuration Data
This sets the operating mode of the boot block area of the BIOS FLASH ROM to allow programming in the *Yes* setting.

PCI Latency Timer (PCI Clocks)
This option sets latency of all PCI devices on the PCI bus. The settings are in units equal to PCI clocks.

Primary Graphic Adapter
This option is set to use PCI bus or AGP. The AGP mode will get system a faster processing speed.

PCI VGA Palette Snoop

This item is for BIOS to snoop the appearance of VGA palette, and modify it when it is necessary.

DMA & IRQ

These options specify the bus that the named IRQs/DMAs lines are used on. These options allow you to specify IRQs/DMAs for use by legacy ISA adapter cards. These options determine if the BIOS should remove an IRQ/DMA from the pool of availability of IRQs/DMAs passed to the BIOS configurable devices. If more IRQs/DMAs must be removed from the pool, the end user can use these PCI/PnP Setup options to remove the IRQ/DMA by assigning the option to the ISA/EISA setting.   The onboard I/O is configurable with BIOS.

Reserved Memory Size

This option specifies the size of the memory area reserved for legacy ISA adapter cards.

Reserved Memory Address

This option specifies the beginning address (in hex) of the reserved memory area.   The specified ROM memory area is reserved for use by legacy ISA adapter cards.

5-7. PERIPHERAL SETUP

This section is used to configure the peripheral features.

AMIBIOS SETUP - PERIPHERAL SETUP		
(C) 2000 American Megatrends, Inc. All Rights Reserved		
OnBoard FDC	Enabled	Available Options:
OnBoard Serial PortA	3F8h/COM1	Disabled
OnBoard Serial PortB	2F8h/COM2	Enabled
Serial PortB Mode	Normal	
IR Duplex Mode	N/A	
IrDA Protocol	N/A	
OnBoard Serial PortC	3E8h/COM3	
OnBoard Serial PortD	2E8h/COM4	
OnBoard Parallel Port	378h	
Parallel Port Mode	Normal	
EPP Version	N/A	
Parallel Port IRQ	N/A	
Parallel Port DMA Channel	N/A	
OnBoard IDE	Both	
		ESC:Exit ↑↓:Sel
		PgUp/PgDn:Modify
		F1: Help F2/F3:Color

BIOS: Peripheral Setup Defaults

OnBoard FDC
This option enables the floppy drive controller on the AR-B1660.

OnBoard Serial Port
This option enables the serial port on the AR-B1660.

IR Port support
This item is to activate the function of Infra-red.

OnBoard Parallel Port
This option enables the parallel port on the AR-B1660.

Parallel Port Mode
This option specifies the parallel port mode. ECP and EPP are both bi-directional data transfer schemes that adhere to the IEEE1284 specifications.

Parallel Port DMA Channel
This option is only available if the setting for the parallel Port Mode option is ECP.

OnBoard IDE
This option is to set up the operating mode of IDE controller. If the main board offer the enhanced I/O port, the choice should be <*enabled*> .

5-8. AUTO-DETECT HARD DISKS

This option detects the parameters of an IDE hard disk drive, and automatically enters them into the Standard CMOS Setup screen.

5-9. PASSWORD SETTING

This BIOS Setup has an optional password feature. The system can be configured so that all users must enter a password every time the system boots or when BIOS Setup is executed. The user can set either a Supervisor password or a User password.

5-10. SETTING THE PASSWORD

Select the appropriate password icon (Supervisor or User) from the Security section of the BIOS Setup main menu. Enter the password and press [Enter]. The screen does not display the characters entered.   After the new password is entered, retype the new password as prompted and press [Enter].

If the password confirmation is incorrect, an error message appears.   If the new password is entered without error, press [Esc] to return to the BIOS Main Menu.   The password is stored in CMOS RAM after the BIOS is exited and saved.   Next time the system boots, you are prompted for the password function presented and enabled.

```
Enter new supervisor password:
```

5-11. PASSWORD CHECKING

The password check option is enabled in Advanced Setup by choosing either *Always* (the password prompt appears every time the system is powered on) or *Setup* (the password prompt appears only when BIOS runs). The password is stored in CMOS RAM. The user can enter a password by typing on the keyboard. As the user selects Supervisor or User, the BIOS prompts for a password.   Then the user must set the Supervisor password before he can set the User password. Enter a 1 to 6 characters password. The password does not appear on the screen when being typed. Make sure you write it down.

5-12. LOAD DEFAULT SETTING

This section permits users to select a group of settings for all BIOS Setup options.   Not only can you use these items to quickly set system configuration parameters, you can also choose a group of settings that has a better chance of working when the system is having configuration related problems.

5-12-1. Auto Configuration with Optimal Setting
The user can load the optimal default settings for the BIOS. The Optimal default settings are best-case values that should optimize system performance. If CMOS RAM is corrupted, the optimal settings are loaded automatically.

```
Load high performance setting (Y/N) ?
```

5-12-2. Auto Configuration with Fail Safe Setting

The user can load the Fail-Safe BIOS Setup option settings by selecting the Fail-Safe item from the Default section of the BIOS Setup main menu.

The Fail-Safe settings provide far from optimal system performance, but are the most stable settings.   Use this option as a diagnostic aid if the system behaves erratically.

```
Load failsafe settings (Y/N) ?
```

5-13. BIOS EXIT

This section is used to exit the BIOS main menu. After making your changes, you can either save them or exit the BIOS menu without saving the new values.

5-13-1. Save Settings and Exit

This item is in the <Standard CMOS Setup>, <Advanced CMOS Setup>, <Advanced Chipset Setup> and the new password (if it has been changed) will be stored in the CMOS.   The CMOS checksum is calculated and written into the CMOS.

When you select this function, the following message will appear at the center of the screen to assist you to save data to CMOS and Exit the Setup.

```
Save current settings and exit (Y/N) ?
```

5-13-2. Exit Without Saving

When you select this option, the following message will appear at the center of the screen to help to abandon all the modified data and Exit Setup.

```
Quit without saving (Y/N) ?
```

5-14. BIOS UPDATE

The BIOS program instructions are contained within computer chips called FLASH ROMs that are located on your system board. The chips can be electronically reprogrammed, allowing you to upgrade your BIOS firmware without removing and installing chips.
The AR-B1682 provides the FLASH BIOS update function for you to easily update a newer BIOS version. Please follow these operating steps to update new BIOS:

Step 1: Turn on your system and don't detect the CONFIG.SYS and AUTOEXEC.BAT files.

Step 2: Insert the FLASH BIOS diskette into the floppy disk drive.

Step 3: In the MS-DOS mode, you can type the FLASH812 program.

A: \>FLASH812

Step 4: Press [ALT+F], The <File> box will show the following message, this message will be highlighted.

BIOS Filename Loading … .

After typing in the File name you must press<ENTER> or press <ESC> to exit.

Step 5: Please enter the file name to the <Enter File Name> box. And the <Message> box will show the following notice.

Are you sure to write this BIOS into flash ROM?

Step 6: Press the <Enter> key to update the new BIOS.
Then the <Message> box will show the <Programming now …>.

Step 7: When the BIOS update is successful, the message will show <Flash ROM Update Completed - Pass>.

Note:
If the content in Setting is inconsistent with CD-ROM. Please refer to the Setting as priority.